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An Ephemeris of the Stars proper to be observed with Mars, *at the ensuing Opposition of that Planet.*

1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Oct. 11	53 Tauri	6·7	4 9 34,69	20 43 48,0			
	* —— (*c*)	8	16 23,90	21 4 56,7			
	Mars²	N	22 55,23	20 36 55,1	0·586	8,22	14,71
12	53 Tauri	6·7	4 9 34,71	20 43 48,1			
	* —— (*c*)	8	16 23,92	21 4 56,8			
	Mars²	S	22 59,00	20 39 22,5	·590	8,28	14,82
13	53 Tauri	6·7	4 9 34,74	20 43 48,1			
	* —— (*c*)	8	16 23,95	21 4 56,8			
	Mars²	N	22 59,07	20 41 44,0	·594	8,34	14,92
14	53 Tauri	6·7	4 9 34,76	20 43 48,2			
	* —— (*c*)	8	16 23,97	21 4 56,8			
	Mars²	S	22 55,40	20 43 59,6	·599	8,40	15,03
15	53 Tauri	6·7	4 9 34,78	20 43 48,2			
	* —— (*c*)	8	16 23,99	21 4 56,9			
	Mars²	N	22 47,94	20 46 9,3	·603	8,46	15,14
16	53 Tauri	6·7	4 9 34,81	20 43 48,3			
	* —— (*c*)	8	16 24,02	21 4 57,0			
	Mars²	S	22 36,66	20 48 12,9	·607	8,51	15,24
17	53 Tauri	6·7	4 9 34,83	20 43 48,3			
	* —— (*c*)	8	16 24,04	21 4 57,0			
	Mars²	N	22 21,55	20 50 10,4	·612	8,57	15,34

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Oct. 18	53 Tauri	6·7	4 9 34,85	20 43 48,4			
	* ——— (*c*)	8	16 24,07	21 4 57,1			
	Mars^2	S	22 2,59	20 52 1,7	0·616	8,63	15,44
19	53 Tauri	6·7	4 9 34,87	20 43 48,4			
	* ——— (*c*)	8	16 24,09	21 4 57,1			
	Mars^2	N	21 39,77	20 53 46,2	·620	8,69	15,54
20	53 Tauri	6·7	4 9 34,90	20 43 48,5			
	* ——— (*c*)	8	16 24,11	21 4 57,2			
	Mars^2	S	21 13,09	20 55 24,0	·624	8,74	15,63
21	53 Tauri	6·7	4 9 34,92	20 43 48,5			
	* ——— (*c*)	8	16 24,14	21 4 57,2			
	Mars^2	N	20 42,55	20 56 55,0	·628	8,79	15,73
22	53 Tauri	6·7	4 9 34,94	20 43 48,6			
	* ——— (*c*)	8	16 24,16	21 4 57,3			
	Mars^2	S	20 8,18	20 58 19,1	·632	8,84	15,83
23	53 Tauri	6·7	4 9 34,96	20 43 48,6			
	* ——— (*c*)	8	16 24,18	21 4 57,3			
	Mars^2	N	19 30,01	20 59 36,3	·636	8,90	15,93
24	53 Tauri	6·7	4 9 34,98	20 43 48,7			
	* ——— (*c*)	8	16 24,20	21 4 57,4			
	Mars^2	S	18 48,06	21 0 46,3	·640	8,95	16,02
25	53 Tauri	6·7	4 9 35,00	20 43 48,7			
	* ——— (*c*)	8	16 24,22	21 4 57,4			
	Mars^2	N	18 2,39	21 1 49,1	·643	9,00	16,12
26	51 Tauri	6·7	4 8 29,99	21 9 47,6			
	* ——— (*c*)	8	16 24,25	21 4 57,4			
	Mars^2	S	17 13,06	22 2 44,4	·647	9,05	16,20
27	51 Tauri	6·7	4 8 30,01	21 9 47,6			
	Mars^2	N	16 20,15	21 3 32,1	·650	9,10	16,28
	* Tauri (*c*)	8	16 24,27	21 4 57,5			

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Oct. 28	51 Tauri	6·7	4 8 30,03	21 9 47,6			
	Mars^2	S	15 23,73	21 4 11,9	0·653	9,14	16,35
	* Tauri (*c*)	8	16 24,29	21 4 57,5			
29	51 Tauri	6·7	4 8 30,05	21 9 47,7			
	Mars^2	N	14 23,89	21 4 43,9	·656	9,18	16,42
	* Tauri (*c*)	8	16 24,31	21 4 57,6			
30	51 Tauri	6·7	4 8 30,07	21 9 47,8			
	Mars^2	S	13 20,74	21 5 7,8	·659	9,22	16,49
	* Tauri (*c*)	8	16 24,33	21 4 57,6			
31	51 Tauri	6·7	4 8 30,09	21 9 47,8			
	Mars^2	N	12 14,38	21 5 23,8	·661	9,26	16,56
Nov. 1	A^1 Tauri	5	3 54 49,28	21 37 1,3			
	Mars^2	N	4 11 4,93	21 5 31,7	·664	9,29	16,62
2	A^1 Tauri	5	3 54 49,30	21 37 1,4			
	Mars^2	S	4 9 52,50	21 5 31,4	·666	9,32	16,67
3	A^1 Tauri	5	3 54 49,31	21 37 1,4			
	Mars^2	N	4 8 37,25	21 5 22,9	·668	9,35	16,72
4	A^1 Tauri	5	3 54 49,33	21 37 1,5			
	Mars^2	S	4 7 19,30	21 5 6,2	·670	9,38	16,77
5	A^1 Tauri	5	3 54 49,35	21 37 1,5			
	Mars^2	N	4 5 58,81	21 4 41,2	·671	9,41	16,81
6	A^1 Tauri	5	3 54 49,36	21 37 1,6			
	Mars^2	S	4 4 35,92	21 4 7,8	·673	9,43	16,84
7	A^1 Tauri	5	3 54 49,38	21 37 1,6			
	Mars^2	N	4 3 10,81	21 3 26,3	·674	9,45	16,87
	53 Tauri	6·7	9 35,25	20 43 49,2			
8	A^1 Tauri	5	3 54 49,39	21 37 1,7			
	Mars^2	S	4 1 43,65	21 2 36,7	·675	9,46	16,90
	53 Tauri	6·7	9 35,27	20 43 49,3			

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Nov. 9	A^1 Tauri	5	3 54 49,41	21 37 1,7			
	Mars[2]	N	4 0 14,61	21 1 38,9	0·676	9,47	16,92
	53 Tauri	6·7	9 35,29	20 43 49,3			
10	A^1 Tauri	5	3 54 49,43	21 37 1,8			
	Mars[2]	S	58 43,88	21 0 33,2	·676	9,48	16,93
	53 Tauri	6·7	4 9 35,30	20 43 49,3			
11	* Tauri (*b*)	8	3 47 23,56	20 49 51,1			
	Mars[2]	N	57 11,67	20 59 19,7	·677	9,48	16,94
	53 Tauri	6·7	4 9 35,32	20 43 49,4			
12	* Tauri (*b*)	8	3 47 23,57	20 49 51,1			
	Mars[2]	S	55 38,15	20 57 58,5	·677	9,48	16,95
	53 Tauri	6·7	4 9 35,34	20 43 49,4			
13	* Tauri (*b*)	8	3 47 23,59	20 49 51,1			
	Mars[2]	N	54 3,55	20 56 30,0	·677	9,47	16,94
	53 Tauri	6·7	4 9 35,35	20 43 49,4			
14	* Tauri (*b*)	8	3 47 23,60	20 49 51,2			
	Mars[2]	S	52 28,07	20 54 24,2	·676	9,46	16,94
	53 Tauri	6·7	4 9 35,37	20 43 49,4			
15	* Tauri (*b*)	8	3 47 23,61	20 49 51,2			
	Mars[2]	N	50 51,93	20 53 11,6	·675	9,45	16,92
	53 Tauri	6·7	4 9 35,38	20 43 49,5			
16	* Taur (*b*)	8	3 47 23,62	20 49 51,2			
	Mars[2]	S	49 15,35	20 51 22,6	·674	9,44	16,90
	A^1 Tauri	5	54 49,51	21 37 2,0			
17	* Tauri (*b*)	8	3 47 23,64	20 49 51,3			
	Mars[2]	N	47 38,55	20 49 27,7	·673	9,42	16,87
	A^1 Tauri	5	54 49,52	21 37 2,0			
18	Mars[2]	S	3 46 1,77	20 47 27,4	·671	9,40	16,83
	* Tauri (*b*)	8	47 23,65	20 49 51,3			
	A^1 ——	5	54 49,54	21 37 2,1			

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Nov. 19	Mars^2	N	3 44 25,23	20 45 22,0	0·669	9,38	16,79
	* Tauri (*b*)	8	47 23,66	20 49 51,3			
	A^1 ——	5	54 49,55	21 37 2,1			
20	Mars^2	S	3 42 49,15	20 43 12,0	·667	9,35	16,74
	* Tauri (*b*)	8	47 23,67	20 49 51,4			
	A^1 ——	5	54 49,56	21 37 2,1			
21	Mars^1	N	3 41 13,76	20 40 58,1	·664	9,32	16,69
	* Tauri (*b*)	8	47 23,68	20 49 51,4			
	A^1 ——	5	54 49,57	21 37 2,2			
22	Mars^1	S	3 39 39,27	20 38 40,9	·662	9,29	16,63
	* Tauri (*b*)	8	47 23,69	20 49 51,4			
	A^1 ——	5	54 49,58	21 37 2,2			
23	F^1 Tauri	6·7	3 32 41,40	19 9 31,9			
	Mars^1	N	38 5,93	20 36 21,0	·659	9,26	16,56
	32 Tauri	6	47 0,26	21 59 25,0			
24	F^1 Tauri	6·7	3 32 41,41	19 9 31,9			
	Mars^1	S	36 33,94	20 33 59,3	·656	9,22	16,49
	32 Tauri	6	47 0,26	21 59 25,0			
25	* Tauri (*a*)	9	3 29 18,97	20 21 54,1			
	Mars^1	N	35 3,49	20 31 36,4	·653	9,18	16,42
	32 Tauri	6	47 0,27	21 59 25,0			
26	* Tauri (*a*)	9	3 29 18,98	20 21 54,1			
	Mars^1	S	33 34,30	20 29 12,8	·649	9,13	16,33
	32 Tauri	6	47 0,28	21 59 25,1			
27	* Tauri (*a*)	9	3 29 18,99	20 21 54,1			
	Mars^1	N	32 8,03	20 26 49,4	·646	9,09	16,24
	32 Tauri	6	47 0,28	21 59 25,1			
28	* Tauri (*a*)	9	3 29 18,99	20 21 54,2			
	Mars^1	S	30 43,35	20 24 26,9	·642	9,04	16,15
	32 Tauri	6	47 0,29	21 59 25,1			

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
Nov. 29	65 Arietis	6	h m s 3 14 48,28	° ′ ″ 20 12 19,6			
	* Tauri (*a*)	9	29 19,00	20 21 54,2			
	Mars[1]	N	29 20,94	20 22 6,0	s 0·638	″ 8,98	″ 16,05
30	65 Arietis	6	3 14 48,29	20 12 19,6			
	Mars[1]	S	28 0,93	20 19 47,3	·634	8,92	15,95
	* Tauri (*a*)	9	29 19,00	20 21 54,2			
Dec. 1	65 Arietis	6	3 14 48,29	20 12 19,6			
	Mars[1]	N	26 43,48	20 17 31,4	·630	8,86	15,85
	* Tauri (*a*)	9	29 19,01	20 21 54,2			
2	65 Arietis	6	3 14 48,29	20 12 19,6			
	Mars[1]	S	25 28,68	20 15 19,1	·625	8,80	15,74
	* Tauri (*a*)	9	29 19,01	20 21 54,2			
3	65 Arietis	6	3 14 48,30	20 12 19,6			
	Mars[1]	N	24 16,67	20 13 10,8	·621	8,73	15,63
	* Tauri (*a*)	9	29 19,02	20 21 54,3			
4	65 Arietis	6	3 14 48,30	20 12 19,7			
	Mars[1]	S	23 7,55	20 11 7,1	·616	8,66	15,51
5	65 Arietis	6	3 14 48,30	20 12 19,7			
	Mars[1]	N	22 1,42	20 9 8,6	·611	8,60	15,39
	F^1 Tauri	6·7	32 41,47	19 9 32,1			
6	65 Arietis	6	3 14 48,30	20 12 19,7			
	Mars[1]	S	20 58,33	20 7 15,7	·606	8,53	15,27
	F^1 Tauri	6·7	32 41,47	19 9 32,1			
7	65 Arietis	6	3 14 48,30	20 12 19,7			
	Mars[1]	N	19 58,38	20 5 29,0	·601	8,46	15,15
	F^1 Tauri	6·7	32 41,48	19 9 32,1			
8	65 Arietis	6	3 14 48,30	20 12 19,7			
	Mars[1]	S	19 1,62	20 3 48,7	·596	8,39	15,02
	F^1 Tauri	6·7	32 41,48	19 9 32,1			

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1832.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Dec. 9	65 Arietis	6	3 14 48,31	20 12 19,8			
	Mars¹	N	18 8,11	20 2 15,4	0·591	8,32	14,89
	F¹ Tauri	6·7	32 41,48	19 9 32,1			
10	65 Arietis	6	3 14 48,31	20 12 19,8			
	Mars¹	S	17 17,89	20 0 49,5	·586	8,25	14,76
	F¹ Tauri	6·7	32 41,48	19 9 32,1			
11	(38) Arietis	8	3 11 15,80	19 54 0,6			
	65 ———	6	14 48,31	20 12 19,8			
	Mars¹	N	16 31,00	19 59 31,3	·581	8,18	14,63
12	(38) Arietis	8	3 11 15,80	19 54 0,6			
	65 ———	6	14 48,31	20 12 19,8			
	Mars¹	S	15 47,47	19 58 21,2	·575	8,10	14,49
13	(38) Arietis	8	3 11 15,80	19 54 0,6			
	65 ———	6	14 48,30	20 12 19,8			
	Mars¹	N	15 7,33	19 57 19,5	·570	8,02	14,36
14	(38) Arietis	8	3 11 15,80	19 54 0,7			
	Mars¹	S	14 30,62	19 56 26,4	·564	7,94	14,22
	65 Arietis	6	14 48,30	20 12 19,8			
15	(38) Arietis	8	3 11 15,80	19 54 0,7			
	Mars¹	N	13 57,33	19 55 42,1	·558	7,87	14,09
	65 Arietis	6	14 48,30	20 12 19,8			
16	(38) Arietis	8	3 11 15,80	19 54 0,7			
	Mars¹	S	13 27,49	19 55 6,9	·553	7,79	13,95
	65 Arietis	6	14 48,30	20 12 19,8			
17	(38) Arietis	8	3 11 15,79	19 54 0,7			
	Mars¹	N	13 1,10	19 54 41,1	·548	7,72	13,81
	65 Arietis	6	14 48,30	20 12 19,8			
18	(38) Arietis	8	3 11 15,79	19 54 0,7			
	Mars¹	S	12 38,15	19 54 24,6	·542	7,64	13,67
	65 Arietis	6	14 48,30	20 12 19,8			

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1830.	Stars.	Mag.	Apparent Place.		Semidiameter.		Hor. Par.
			Right Ascens.	Declin. *North.*	In time.	In arc.	
			h m s	° ′ ″	s	″	″
Dec. 19	(38) Arietis	8	3 11 15,79	19 54 0,7			
	Mars[1]	N	12 18,64	19 54 17,8	0·536	7,56	13,54
	65 Arietis	6	14 48,29	20 12 19,8			
20	(38) Arietis	8	3 11 15,78	19 54 0,7			
	Mars[1]	S	12 2,56	19 54 20,9	·531	7,49	13,40
	65 Arietis	6	14 48,29	20 12 19,8			
21	(38) Arietis	8	3 11 15,78	19 54 0,7			
	Mars[1]	N	11 49,87	19 54 33,6	·526	7,41	13,26
	65 Arietis	6	14 48,29	20 12 19,8			
22	(38) Arietis	8	3 11 15,78	19 54 0,7			
	Mars[1]	S	11 40,61	19 54 56,4	·520	7,33	13,12
	65 Arietis	6	14 48,28	20 12 19,8			
23	(38) Arietis	8	3 11 15,77	19 54 0,7			
	Mars[1]	N	11 34,72	19 55 29,2	·515	7,25	12,99
	65 Arietis	6	14 48,28	20 12 19,8			
24	(38) Arietis	8	3 11 15,77	19 54 0,7			
	Mars[1]	S	11 32,18	19 56 11,9	·510	7,18	12,85
	65 Arietis	6	14 48,27	20 12 19,8			
25	(38) Arietis	8	3 11 15,76	19 54 0,7			
	Mars[1]	N	11 32,95	19 57 4,7	·505	7,10	12,71
	65 Arietis	6	14 48,27	20 12 19,8			

Previous to Mr. Henderson's departure for the Observatory at the Cape of Good Hope, (to which he has recently been appointed Astronomer, in the room of the late Rev. Fearon Fallows), he expressed a wish that a selection might be made of such stars as would be proper and convenient to be observed with *Mars*, at his ensuing opposition in November next; with a view to the determination of the parallax of that planet: and that a list of the same should be circulated amongst different astronomers in various parts of the world, for the purpose of obtaining corresponding observations.

Mr. Sheepshanks having furnished the apparent places of *Mars* (together with the semidiameter and horizontal parallax) for each day during the requisite period, Mr. Baily selected the stars agreeably to Mr. Henderson's wishes: and the Council of this Society, desirous of promoting, as much as lies in their power, an object which, if actively and properly followed up, may be attended with much advantage to the science of astronomy, have caused the same to be printed and circulated.

The positions of *Mars* are the *apparent* geocentric places (corrected for aberration) at mean midnight at *Berlin;* deduced from the Berlin ephemeris, using 5th differences in the computation. The positions of the stars also are their *apparent* places on the day of transit: Mr. Sheepshanks having furnished the daily corrections for precession, aberration, and nutation. These stars are selected in such manner that there may always be a sufficient interval of time between the transit of the star and the planet, to enable the observer to read off the divisions of the circle or micrometer; except in a few cases when they are both in the field of the telescope at the same time, or so nearly on the same parallel that one setting of the instrument will be sufficient for both observations, with the aid of a micrometer.

Mr. Henderson requests that, when both limbs of *Mars* cannot be conveniently observed on the same day, the *northern* limb should be observed on the *odd* days, and the *southern* limb on the *even* days of the month: as a guide to the observer, this is denoted by the letters N and S inserted in the column of magnitudes. Also, that the transit of the *second* limb should be observed *prior* to the day of opposition, and the transit of the *first* limb *after* that day: this is denoted by the figures 1 and 2 annexed to *Mars.*

Aldebaran should be observed on every night when the planet is observed.

Those astronomers, who are possessed of good equatorial instruments, may take *repeated* measures of the difference of declination between the selected star and the planet on the same night: noting, however, the times at which the observations were made.

The ephemeris is extended from October 11th to December 25th, for the purpose of including the stationary points of *Mars*, both in right ascension and declination.

The star (38) *Arietis* is to be found in Piazzi's catalogue: the small stars (*a*) (*b*) (*c*) are taken from Lalande's *Histoire Céleste,* page 33. The star (*b*) is the brightest, the most northerly, and the second of two stars that are distant from each other about 2′ in declination; and *between* which *Mars* will pass on November 17th. For this, and for two or three other proximate stars, the wire micrometer might be advantageously used in determining the difference of declination. The places of the larger stars are taken from the catalogue of this Society, and the constants there given are used in the reductions.

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The following are the assumed mean places, on January 1, 1832, of the 10 stars selected for the comparisons; viz.

Star.	Mag.	Mean Æ.			Mean D. *North.*		
		h	m	s	°	′	″
(38) Arietis	8	3	11	12,37	19	53	50,48
65 ———	6		14	44,87	20	12	9,87
* Tauri (*a*)	9		29	15,55	20	21	45,62
F¹ ———	6·7		32	38,01	19	9	23,82
32 ———	6		46	56,77	21	59	18,00
* ——— (*b*)	8		47	20,25	20	49	44,88
A¹ ———	5		54	46,12	21	36	55,94
51 ———	7	4	8	26,98	21	9	43,42
53 ———	6·7		9	32,03	20	43	44,60
* ——— (*c*)	8		16	21,26	21	4	53,84

Other quantities, used in the computations, are the following: viz.

Sun's horizontal parallax = 8″,578
Mean semidiameter of Mars = 4 ,790
Constant of aberration = $493^s,2$

Berlin, East of Paris = $44^m\ 12^s,6$
——— of Greenwich = 53 34 ,1

⁂ Mr. Henderson was also desirous that some stars should be selected for observing the parallax of *Mars* in *right ascension;* agreeably to the method pointed out by Lalande, in his *Astronomie*, vol. ii. page 281: since *Mars* will be favourably situated, at the ensuing opposition, for such observations in the northern hemisphere. But there are no stars, near the path of the planet at that time, of sufficient magnitude for such purpose.

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